

CLAIMS

1. Sensor (10) comprising at least a first area (11) and a second area (12) of pixel elements arranged to absorb electromagnetic radiation from an object (2), the characteristics of which are to be imaged, and to convert the radiation absorbed into electrical charges, in which the first area (11)
5 has a first degree of resolution and the second area (12) has a second degree of resolution different from the first degree of resolution,
characterised in that the first area (11) is arranged to image one type of characteristics and the second area (12) is arranged to image another type of characteristics.
- 10 2. Sensor according to Claim 1, **characterised in that** the first area (11) is arranged to image three-dimensional characteristics of the object (2) and that the second area (12) is arranged to image two-dimensional characteristics of the object (2).
- 15 3. Sensor according to Claim 1, **characterised in that** at least one of the two areas (11, 12) is provided in its entirety or partially with colour filters in order to image the object (2) in colour.
- 20 4. Sensor according to any one of Claims 1 to 3, **characterised in that** the first area (11) is designed as a matrix having N rows and M columns, that the second area (12) is designed as a matrix having X rows and Y columns and that Y is b multiplied by M columns, where b is an integer greater than zero.
- 25 5. Sensor according to Claim 4, **characterised in that** time delay integration (TDI) is used on the second area (12).
- 30 6. Sensor according to Claim 1, **characterised in that** at least one of the areas (11, 12) is provided with filters for different wavelengths in order to minimise crosstalk.
- 35 7. Sensor according to Claim 1, **characterised in that** the first area and the second area are arranged parallel in a transverse direction as one integral unit.

8. Sensor according to Claim 1, **characterised in that** the first area and the second area are arranged parallel in a transverse direction as two separate units.
- 5 9. System for measuring character-dependent parameters of an object (2) comprising at least one light source (3, 4), which emits light towards the object (2) **characterised in that** the system further comprises a sensor (10) according to any one of Claims 1 to 8, arranged to absorb electromagnetic radiation from the object (2) and to convert it into electrical charges.
- 10 10. System according to Claim 9, **characterised in that** the system also comprises an output register (15) arranged to read out the charges received in the sensor (10).
- 15 11. System according to Claim 9, **characterised in that** the system also comprises at least two output registers (18a, 18b) arranged to read out the charges received in the sensor (10).
- 20 12. System according to Claim 11, **characterised in that** the first area (11) and the second area (12) of the sensor (10) are each read out on their own output register (18a, 18b).
- 25 13. System according to Claim 11, **characterised in that** if the second area (12) of the sensor is provided with colour filters, each colour picked up has its own output register.
- 30 14. System according to Claim 10 or 11, **characterised in that** the system further comprises an A/D converter (16) arranged to convert the electrical charges from an analog to a digital format and that the output register (15, 18a, 18b) is a digital output register.
- 35 15. System according to Claim 9, **characterised in that** the system also comprises an image/signal processing unit arranged to analyse the electrical charges.